REMARKS

This Amendment is submitted in response to the Office Communication stating that the Amendment dated on July 21, 2004 was not fully responsive due to an inadvertent error in the listing of claims.

Applicants have amended claim 18 to reflect the amendment submitted in the Amendment dated September 29, 2003. Applicants have amended the claims to replace the term "contacting" with the term "administering to". Similarly the phrase "with addition" has been replaced with the phase "sufficient amount of additional... to boost the immune response."As such the amendment is merely clerical and does not introduce new matter and its entry is respectfully requested.

Claim 18 submitted with the Amendment dated July 21, 2004 inadvertently omitted part of the amendments submitted on September 29, 2003.

Applicants are repeating the amendment to the specification made at "added page 1" of the application transmittal claiming priority under 35 U.S.C. §120 by updating the status of the parent application. This amendment does not constitute new matter and its entry is respectfully requested.

Applicants have amended claim 17 by rewriting it as two claims: an amended claim 17 refers to the use of cytokines and claim 35 refers to co-stimulatory molecules. Applicants have further amended claims 17 and 35 to explicitly refer to "T-cell eliciting" immune response. The amendment is supported, for example, on page 11 under "Generation of Cytotoxic T-cells." Therefore, no new matter is introduced by the virtue of the amendment.

Applicants have rewritten claim 18 in independent form. Claim 18 combines the limitations of both previously presented claims 17 and 18; therefore, the claim is supported by the specification and does not introduce new matter.

Applicants have amended claim 20 to refer to replication impaired poxviruses only. The amendment is supported by the specification, particularly at page 5, and it does not introduce new matter.

Applicants have added new claims 30 to 34. These claims are supported throughout the specification. Specifically, claim 30 is supported at p. 4, lines 13-15, claims 31-33 at page 5, lines 1-15, claim 34 at page 5, lines 9-15. Consequently, no new matter is introduced by the virtue of these amendments.

Applicants have further amended claim 24 to depend upon claim 18 in addition to claim 17. The limitation encompasses the same subject matter as the previously presented claim citing only claim 17, because claim 18 has been written in independent form which incorporates into it all the limitations of previously presented claims 17 and 18.

Consequently, no new matter is introduced by any of the amendments, and their entry is respectfully requested.

Turning now to the specific rejections by the Examiner.

Claims 17-19, 24-26 and 28 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,925,362 ("Spitler").

Applicants respectfully disagree and submit that the rejection should be withdrawn for the following reasons.

The present claims are directed to a method of eliciting a cytotoxic T-cell mediated immune response that requires the use of PSA **and** a **cytokine** (claims 17, 18, 19, 24-26, 28) **or** a **co-stimulatory molecule** (claims 18, 19, 24-26, 28, 35). Spitler does **not** describe or teach such a method. Spitler does not teach any co-stimulatory molecules. Spitler also does not teach eliciting a cytotoxic T-cell mediated immune response. All Spitler tries to describe is producing "an immune response" without specifying what kind of immune response. There are a range of immune reactions from CD4+ T cell response to CD8+ T cell responses (a cytotoxic T cell response is a CD8+ T cell response). Therefore, Spitler does not describe critical elements of the claims, and cannot anticipate the present claims.

Moreover, even if all elements of the claims were shown (which is not the case here), the prior art must also provide an enabling disclosure to anticipate claims (M.P.E.P. 2131.01). For the reasons discussed below, Applicants submit that Spitler does not enable a skilled artisan to practice an invention commensurate with the scope of the present claims. Applicants enclose a copy of the previously submitted Declaration by Dr. Schlom to further support this position.

As explained in the Background of the Invention, PSA is a serine protease, produced by **normal** prostatic tissue, and secreted exclusively by the epithelial cells lining prostatic acini and ducts (Wang, et al., Methods in Cancer Research, 19:179-197, (1982); Wang, et al., Investigations in Urology, 17:159-163, (1979).; Lilja, et al., World Journal of Urology, 11:188-191, (1993)). Prostate specific antigen can be detected at low levels in the sera of healthy males without clinical evidence of prostate cancer.

However, because PSA is a **self-antigen or autoantigen** it has proven difficult to generate an effective *in vivo* immune response (see, e.g., page 2, fourth full paragraph of Schlom Declaration).

This difficulty in generating an immune response to PSA can further be seen by looking at the Spitler disclosure. While Spitler allegedly teaches a prostate cancer vaccine, Spitler disclosed **no** working examples and **no** experimental results showing the use of any of the number of different antigens discussed. Rather, it amounted to simply a wish for a vaccine effective in treating prostate cancer.

The claims require not only the use of **specifically PSA** or a T-cell eliciting epitope thereof, as an antigen, but also a cytokine or co-stimulatory molecule, in a preferred embodiment more than one cytokine or co-stimulatory molecules (claim 28). Claims 19, 24-26 and claim 28 further require a boosting administration. These steps are very important in generating the desired CTL immune response. Yet, it is in no way taught or suggested by Spitler.

Additionally, Spitler's description amounted to a shot gun wish to **any antigen** as long as it was "over-represented on the prostate gland" or immunogenic portion thereof (see paragraph bridging columns 2 and 3). Spitler includes no guidance as to why PSA would be the antigen to use over any of the others listed.

Spitler provides no guidance to a skilled artisan to use a PSA prime and a PSA boost to elicit a T-cell mediated immune response in a host. Thus, practicing of the method according to claims 19 cannot be anticipated by Spitler. Claim 19 requires the use of a poxvirus vector for the boost. There is absolutely nothing in Spitler that guides one skilled in the art to a boosting administration, or why one would choose **poxvirus** vectors to deliver **PSA** to a host to elicit an immune response. Certainly in light of the knowledge at the time Spitler filed her application, without any examples, there is nothing that would enable one skilled in the art to choose this method from all the numerous possible combinations.

In view of the above and the Declaration by Dr. Schlom originally submitted in the parent application and re-submitted herewith, Applicants respectfully submit that the claims 17-19, 24-26 and 28 are not anticipated by Spitler and that the rejection should, therefore, be withdrawn.

The Examiner further rejected claims 17-20, 22, and 24-26 as obvious under 35 U.S.C. § 103(a) over Spitler in view of Fields and Hodge.

This rejection should be withdrawn for the following reason.

As explained above and herein incorporated by reference, Applicants respectfully submit that Spitler does not teach or suggest the method of claims 17-20, 22, and 24-26 because Spitler does not describe eliciting cytotoxic T-cell mediated immunity and using a cytokine or co-stimulatory molecule. There is nothing to suggest a prime boost immunization method. No working examples are given to guide a skilled artisan in selecting the antigens, vectors, cytokines, co-stimulatory molecules or the method of administration to produce the desired immune response.

Fields was published in 1996. The present application is a continuation of Application No. 08/500,306, filed July 10, 1995, now U.S. Patent No. 6,165,460. Therefore, Applicants respectfully submit that Fields cannot be considered prior art to the present invention. Even if Fields were prior art, which it is not, it does not overcome the deficiency in Spitler, because Fields does not provide the necessary guidance to one skilled in the art as to the use of PSA as the specific antigen capable of eliciting immune response in a host.

Applicants further submit that Hodge does not overcome the deficiency in Spitler because Hodge does not teach use of PSA.

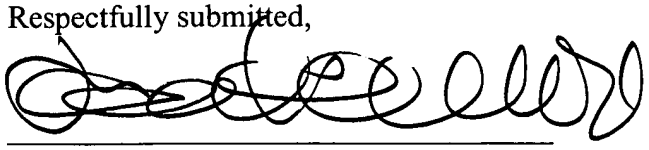
Furthermore, Applicants respectfully submit that they were in possession of the elements relating to the present invention as described in Spitler well before the filing date. In support, Applicants submit herewith a copy of the Declaration under 37 C.F.R. 1.131 by inventors Schlom and Panicali submitted in the parent Application No. 08/500,306, filed July 10, 1995, now U.S. Patent No. 6,165,460. The Declaration sets forth that prior to August 11, 1993, the inventors had conceived and reduced to practice the parts of the invention that are mentioned, without exemplification, in Spitler, and more.

Therefore, Applicants respectfully submit that the rejection over Spitler in light of Fields and Hodge, be withdrawn.

In view of the foregoing, Applicants respectfully submit that all claims are in condition for allowance. Early and favorable action is requested.

In the event that any additional fees are required, the PTO is authorized to charge our deposit account No. 50-0850.

Respectfully submitted,



Date: November 19, 2004

Ronald I. Eisenstein, Reg. No. 30,628
Leena H. Karttunen (37 C.F.R. §10.9(b))
NIXON PEABODY LLP
100 Summer Street
Boston, MA 02110
(617) 345-6054